

What is claimed is:

1. A method for creating recordable regions and non-recordable regions in a recording layer, the method comprising the steps of:

placing a mask over the recording layer, wherein the mask includes a pattern that defines the recordable regions and the non-recordable regions to be created in the recording layer;

changing the magnetic properties of portions of the recording layer in order to create recordable regions or non-recordable regions in the recording layer; and

removing the mask.

2. The method of claim 1, wherein the recording layer is comprised of a single, dual, or multi-layer recording layer.

3. The method of claim 2, wherein the step of placing a mask over the recording layer comprises the sub-steps of:

forming a mask over the recording layer; and

defining a pattern in the mask, wherein the pattern defines the recordable regions and the non-recordable regions to be created in at least one layer in the recording layer.

4. The method of claim 3, wherein the step of defining a pattern in the mask comprises the step of defining a pattern in the mask using photolithography.

- 1 5. The method of claim 4, wherein the step of defining a pattern in the mask
2 using photolithography exposes portions of the recording layer.
3
4
- 5 6. The method of claim 5, wherein the step of changing the magnetic properties
6 of portions of the recording layer comprises the step of exposing the mask and
7 the exposed portions of the recording layer to a plasma, wherein the magnetic
8 properties of at least one layer in the exposed portions of the recording layer are
9 changed.
10
11
- 12 7. The method of claim 5, further comprising the step of etching away a portion
13 of the recording layer in the exposed portions of the recording layer, wherein
14 grooves are formed in at least one layer within the exposed portions of the
15 recording layer.
16
17
- 18 8. The method of claim 7, wherein the step of changing the magnetic properties
19 of portions of the recording layer comprises the step of exposing the mask and
20 the exposed portions of the recording layer to a plasma, wherein the magnetic
21 properties of at least one layer in the exposed portions of the recording layer are
22 changed.
23
24
- 25 9. The method of claim 3, wherein the step of defining a pattern in the mask
26 comprises the step of defining a pattern in the mask using imprint lithography.
27
28
- 29 10. The method of claim 9, further comprising the step of removing at least a
30 portion of the mask after performing imprint lithography, wherein portions of
31 the recording layer are exposed.
32
33

1 11. The method of claim 10, wherein the step of changing the magnetic
2 properties of portions of the recording layer comprises the step of exposing the
3 mask and the exposed portions of the recording layer to a plasma, wherein the
4 magnetic properties of at least one layer in the exposed portions of the recording
5 layer are changed.

6
7
8 12. The method of claim 10, further comprising the step of etching away a
9 portion of the recording layer in the exposed portions of the recording layer,
10 wherein grooves are formed in at least one layer within the exposed portions of
11 the recording layer.

12
13
14 13. The method of claim 12, wherein the step of changing the magnetic
15 properties of portions of the recording layer comprises the step of exposing the
16 mask and the exposed portions of the recording layer to a plasma, wherein the
17 magnetic properties of at least one layer in the exposed portions of the recording
18 layer are changed.

19
20
21 14. A system for creating recordable regions and non-recordable regions in a
22 recording layer, the system comprising:

23
24 means for placing a mask over the recording layer, wherein the mask
25 includes a pattern that defines the recordable regions and the non-recordable
26 regions to be created in the recording layer;

27
28 means for changing the magnetic properties of portions of the recording
29 layer in order to create recordable regions or non-recordable regions in the
30 recording layer; and

31
32 means for removing the mask.

33
34

15. The system of claim 14, wherein the recording layer is comprised of a single, dual, or multi-layer recording layer.

16. The system of claim 15, wherein the means for placing a mask over the recording layer comprises:

means for forming a mask over the recording layer; and

means for defining a pattern in the mask, wherein the pattern defines the recordable regions and the non-recordable regions to be created in at least one layer in the recording layer.

17. The system of claim 16, wherein the means for defining a pattern in the mask exposes portions of the recording layer.

18. The system of claim 17, wherein the means for changing the magnetic properties of portions of the recording layer comprises means for exposing the mask and the exposed portions of the recording layer to a plasma, wherein the magnetic properties of at least one layer in the exposed portions of the recording layer are changed.

19. The system of claim 17, further comprising means for etching away a portion of the recording layer in the exposed portions of the recording layer to form grooves in at least one layer within the exposed portions of the recording layer.

20. The system of claim 19, wherein the means for changing the magnetic properties of portions of the recording layer comprises means for exposing the mask and the exposed portions of the recording layer to a plasma, wherein the

1 magnetic properties of at least one layer in the exposed portions of the recording
2 layer are changed.

3

4

5 21. The system of claim 16, wherein the means for defining a pattern in the mask
6 compresses portions of the mask.

7

8

9 22. The system of claim 21, further comprising means for removing the
10 compressed portions of the mask in order to expose portions of the recording
11 layer.

12

13

14 23. The system of claim 22, wherein the means for changing the magnetic
15 properties of portions of the recording layer comprises means for exposing the
16 mask and the exposed portions of the recording layer to a plasma, wherein the
17 magnetic properties of at least one layer in the exposed portions of the recording
18 layer are changed.

19

20

21 24. The system of claim 22, further comprising means for etching away a portion
22 of the recording layer in the exposed portions of the recording layer to form
23 grooves in at least one layer within the exposed portions of the recording layer.

24

25

26 25. The system of claim 24, wherein the means for changing the magnetic
27 properties of portions of the recording layer comprises means for exposing the
28 mask and the exposed portions of the recording layer to a plasma, wherein the
29 magnetic properties of at least one layer in the exposed portions of the recording
30 layer are changed.

31

32

33 26. A magnetic recording media for a storage device, comprising:

34

1 non-recordable regions in the magnetic recording media; and

2

3 recordable regions in the magnetic recording media, wherein the
4 coercivity of the non-recordable regions differ from the coercivity of the
5 recordable regions.

6

7

8 27. A storage system, comprising:

9

10 a storage disk having recordable and non-recordable regions, wherein the
11 recordable and non-recordable regions are defined by different magnetic
12 properties in a recording layer on the storage disk; and

13

14 means for reading from, and writing to, the recordable regions on the
15 storage disk.